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EXAMINER	
LEUNG, CHRISTINA Y	
ART UNIT	**PAPER NUMBER**
2633	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/038,502	COSTA, PIERRE	
	Examiner	Art Unit	
	Christina Y. Leung	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11 and 13-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11 and 13-31* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

Claim 1 recites "the optical signal" in lines 7 of the claim. Examiner respectfully notes that Applicant should change this phrase to "the optical stream" so that the terminology is consistent throughout the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-6, 11, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoard et al. (US 6,631,481 B1) in view of Warbrick et al. (US 6,694,098 B1).

Regarding claim 11, Hoard et al. discloses an apparatus (Figure 6) comprising:

an optical splitter 30 to split an optical stream (from input 14) into a primary optical stream and a secondary optical stream (column 6, lines 6-7. Hoard et al. also discloses that the stream may be optical, and that an optical splitter may be used accordingly; column 5, lines 10-14) ;

an optoelectronic converter (in waveform analyzer 34) to convert the secondary optical stream to an electrical signal;

a processor (including waveform analyzer 34; column 6, lines 9-15) to process the electrical signal to identify a particular portion of the optical stream;

an optical delay 42 to delay the primary optical stream to provide a delayed optical stream; and

an optical switch (either frequency domain transient filter 26, which is triggered to distort the frequency of the signal, or distortion injector 38 and combiner 46, which work together to trigger amplitude changes in the signal; column 5, lines 42-53; column 6, lines 11-20) responsive to the processor to modify the particular portion of the delayed optical signal.

Similarly, regarding claim 1, Hoard et al. disclose a method (Figure 6) comprising:

splitting an optical stream (from input 14) into a primary optical stream and a secondary optical stream (using splitter 30);

converting the secondary optical stream to an electrical signal (in waveform analyzer 34);

processing the electrical signal to identify a particular portion of the optical stream (using waveform analyzer 34);

delaying the primary optical stream to provide a delayed optical stream (using delay line 42); and

modifying the particular portion of the delayed optical signal (using filter 26 and/or distortion injector 38; column 5, lines 42-53; column 6, lines 11-20).

Further regarding claims 1 and 11, Hoard et al. disclose recovering a data signal and identifying the particular portion based on the data signal, and further disclose that the processing includes coordinating the timing between the two signals in the two paths (i.e., the signal being analyzed by the waveform analyzer and the signal being delayed by the delay line;

column 6, lines 54-60), but they do not specifically disclose recovering a clock signal or using a clock signal as part of the identifying the particular portion.

However, Warbrick et al. teach a system (Figure 3) related to the one disclosed by Hoard et al. including splitting an optical signal 40 into a primary stream and a secondary stream, delaying the primary stream (using delay 62), and converting the secondary stream into an electrical signal and processing it to identify a portion of the optical stream (column 4, lines 53-67; column 5, lines 1-19). Warbrick et al. further teach controlling the timing of the signals may include recovering a clock signal (column 6, lines 55-61). Regarding claims 1 and 11, it would have been obvious to a person of ordinary skill in the art to specifically include a clock recovery circuit as taught by Warbrick et al. in the system and method disclosed by Hoard et al. in order to ensure that the timing of the two signals in the two paths is precisely controlled and that the correct particular portion of the primary signal is properly identified/modified.

Regarding claims 3 and 13, Hoard et al. disclose that the processor (waveform analyzer 34 and waveform generator 36) generates a gating signal at the particular position based on the processing (column 5, lines 21-25 and lines 39-45; column 6, lines 9-20), and that the optical switch modifies the particular portion based on the gating signal (column 5, lines 39-45; column 6, lines 9-20).

Regarding claims 4 and 14, Hoard et al. do not specifically disclose inverting at least one bit in the stream, but they do disclose altering the amplitude of a portion of the stream. It would be well understood in the art that providing the amplitude distortion disclosed by Hoard et al. would inherently invert bits in a portion of an amplitude modulated stream (by changing 0s in the stream to 1s, etc.). Hoard et al. do not specifically disclose amplitude modulated signals, but

amplitude modulation communications systems are commonly known, and therefore, it would have been obvious to a person of ordinary skill in the art to use such signals in the communication system disclosed by Hoard et al. as an engineering design choice of a known way to provide the data signal using known communications devices.

Regarding claims 5 and 15, Hoard et al. disclose that the optical switch modifies the particular portion by suppressing at least one bit in the particular portion of the delayed optical stream (Hoard et al. in particular disclose that the portion of the stream may be attenuated; column 5, lines 48-49).

Regarding claims 6 and 16, Hoard et al. disclose that the particular portion comprises a particular bit position in the optical stream (column 2, lines 21-31).

4. Claims 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton (US 5,646,997 A).

Regarding claim 21, Barton discloses a method comprising:

identifying a particular portion of an electrical signal comprising an in-transit SMPTE-standard digital video stream, the particular portion selected from the group consisting of an active video portion, a horizontal ancillary data portion, a vertical ancillary data portion, a start active video timing portion and an end active video timing portion; and

introducing at least one bit error in the particular portion of the in-transit SMPTE-standard digital video stream (column 4, lines 44-46; column 5, lines 10-24; column 7, lines 31-45).

Similarly, regarding claim 26, Barton discloses an apparatus (Figure 3) comprising:

a processor (including control programmable logic device 300) to identify a particular portion of an in-transit SMPTE-standard digital video stream, the particular portion selected from the group consisting of an active video portion, a horizontal ancillary data portion, a vertical ancillary data portion, a start active video timing portion and an end active video timing portion (column 9, lines 53-58; column 10, lines 26-48); and

a switch (bit merger 302) responsive to the processor to introduce at least one bit error in the particular portion of the in-transit SMPTE-standard digital video stream (column 10, lines 49-57).

Similarly, regarding claim 29, Barton discloses an apparatus (Figure 3) comprising:

a logic component (the circuit shown in Figure 3 including control programmable logic device 30 and bit merger 302) to identify a particular portion of an in-transit SMPTE-standard digital video stream, the particular portion selected from the group consisting of an active video portion, a horizontal ancillary data portion, a vertical ancillary data portion, a start active video timing portion and an end active video timing portion, and to introduce at least one bit error in the particular portion of the in-transit SMPTE-standard digital video stream (column 9, lines 53-58; column 10, lines 26-48).

Barton particularly discloses introducing at least one bit error in a series of luminance values in a SMPTE stream as an example of a "particular portion" of the stream (column 7, lines 38-45); it would be well understood in the art that such luminance values may be part of the active video portion of the video stream. Barton also discloses that the method may be accomplished in real time on a video stream that is in transit (column 9, lines 56-58).

Regarding claims 21, 26, and 29, Barton et al. does not explicitly disclose processing the electrical signal to determine whether to identify an active video portion, a horizontal ancillary data portion, a vertical ancillary data portion, a start active video timing portion and an end active video timing portion of an in-transit SMPTE-standard video stream. However, Barton discloses generally embedding information and introducing at least one bit error in a variety of other input electrical signal formats in addition to an in-transit SMPTE-standard video stream. When the input electrical signal is an SMPTE-standard video stream, Barton discloses a particular embedding technique involving modifying luminance values, but Barton also discloses that other embedding techniques would be used when the input electrical signal is another image or video format.

Regarding claims 21, 26, and 29, it would have been obvious to a person of ordinary skill in the art to process the input electrical signal to first determine the format of the input electrical signal (i.e., whether the electrical signal is in fact an SMPTE-standard video stream) and decide whether to use the above-mentioned identifying of an active video portion including luminance values in the system and method disclosed by Barton, so that the system can proceed with the embedding technique that is most appropriate for the received input signal format.

Regarding claims 22, 27, and 30, Barton discloses that the in-transit SMPTE-standard digital video stream comprises an in-transit SMPTE259M digital video stream (column 5, lines 10-24; column 7, lines 38-45).

Regarding claim 23, Barton discloses

decoding the in-transit SMPTE-standard digital video stream having the at least one bit error to produce a plurality of video frames; and

examining an effect of the at least one bit error on at least one of the video frames (column 5, lines 3-24; column 11, lines 29-33).

Regarding claim 24, Barton does not specifically disclose that the in-transit SMPTE-standard digital video stream is embodied by an optical signal. However, optical networking is well known in the art, and it is further well understood in the art that optical networking particularly provides high speed and high capacity transmission of data. Barton already suggests that video signals such as disclosed are commonly transmitted over networks (column 1, lines 16-20). It would have been obvious to a person of ordinary skill in the art to use an optical signal as the in-transit SMPTE-standard digital video stream in the method disclosed by Barton in order to advantageously transmit it at high speeds on optical networks.

Regarding claim 25, Barton discloses that the in-transit SMPTE-standard digital video stream is embodied by an electrical signal (column 5, lines 10-25).

Regarding claims 28 and 31, Barton discloses a decoder to decode the in-transit SMPTE-standard digital video stream having the at least one bit error to produce a plurality of video frames (column 5, lines 3-24; column 11, lines 29-33).

5. Claims 7-10 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoard et al. in view of Warbrick et al. as applied to claims 1 and 11 above, and further in view of Barton.

Regarding claims 7-10 and 17-20, Hoard et al. do not specifically disclose that the optical stream comprises a SMPTE-standard video stream. However, SMPTE-standard video steams, and SMPTE259M video streams in particular, are known standard formats for video data, as Barton particularly teaches (column 5, lines 14-17).

Regarding claims 9, 10, 19, and 20 in particular, Hoard et al. already disclose that the modifying the particular portion of the signal introduces at least one bit error in the stream (column 4, lines 13-15). Barton et al. further teach introducing errors in SMPTE259M streams in order to embed additional information into the stream such as for authentication purposes, wherein a particular portion to be modified may be part of an active video portion (column 4, lines 43-45; column 5, lines 10-24; column 7, lines 38-45).

Regarding claims 7-10 and 17-20, it would have been obvious to a person of ordinary skill in the art to use SMPTE259M video streams as taught by Barton in the system and method for modifying a stream disclosed by Hoard et al. in order to test the transmission of such commonly known SMPTE259M video streams and improve the communication of video data in a network.

Response to Arguments

6. Applicant's arguments filed 13 June 2005 particularly regarding claims 1 and 11 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 21-31 have been considered but are moot in view of the new ground(s) of rejection (namely, the grounds of rejection under 35 U.S.C. 103(a) as being unpatentable over Barton instead of under 35 U.S.C. 102(b)).

Regarding claims 1 and 11 in particular, Examiner respectfully notes that Hoard et al. already disclose identifying a particular portion of the optical stream. Hoard et al. also disclose recovering a data signal from the optical stream and identifying the particular portion based on the data signal, and further disclose processing including coordinating the timing between the two signals in the two paths (i.e., the signal being analyzed by the waveform analyzer and the

signal being delayed by the delay line; column 6, lines 54-60). Regarding claims 1 and 11, Hoard et al. only do not specifically disclose using a clock signal as part of the identifying the particular portion. As discussed above, Warbrick et al. teach controlling of the timing of signals, including recovering a clock signal in order to identify a portion of an optical stream (column 6, lines 55-61). The *combination* of Hoard et al. in view of Warbrick et al. suggests identifying a particularly portion of the optical stream based on at least the clock signal and the data signal. In response to Applicant's arguments against the references individually on page 10 of Applicant's response, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding claims 21, 26, and 29 in particular, again, Barton discloses a particular embedding technique involving modifying luminance values when the input electrical signal is an SMPTE-standard video stream, but Barton also discloses that other embedding techniques would be used when the input electrical signal is another image or video format. It would have been obvious to a person of ordinary skill in the art to process the input electrical signal to first determine the format of the input electrical signal (i.e., whether the electrical signal is in fact an SMPTE-standard video stream) and decide whether to use the above-mentioned identifying of an active video portion including luminance values in the system and method disclosed by Barton, so that the system can proceed with the embedding technique that is most appropriate for the received input signal format.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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